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Nature-Inspired Stereospecific Total Synthesis of *P*-(+)-Dispegatrine and Four Other Monomeric *Sarpagine* Indole Alkaloids

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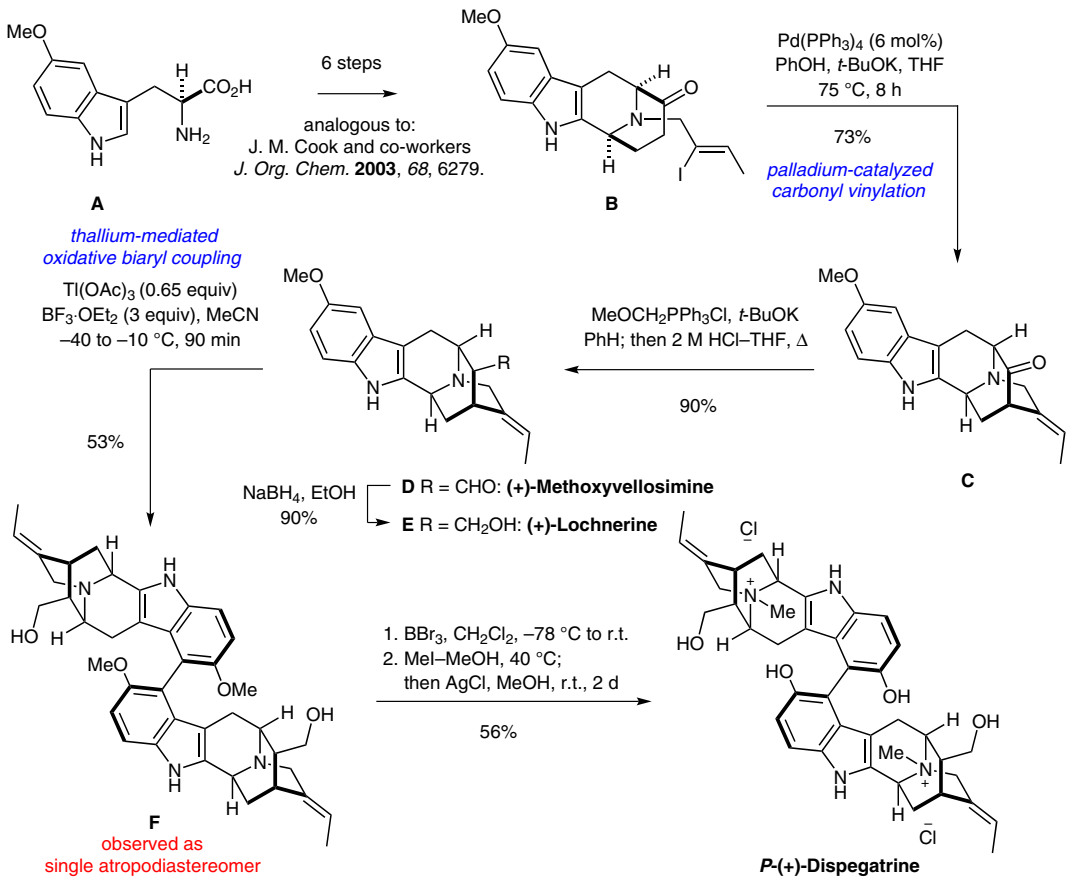
Total Synthesis of the Dimeric *Sarpagine* Indole Alkaloid *P*-(+)-Dispegatrine



Significance: Reported in this work is the first total synthesis of *P*-(+)-dispegatrine, a complex dimeric *sarpagine* indole alkaloid, which has been shown to exhibit anti-hypertensive activity due to its affinity to both the α1 and α2 adrenoreceptors. In addition to an efficient asymmetric route, the synthetic efforts toward this natural product have also led to the determination of the absolute configuration around the biaryl axis, which had previously been left unassigned by the isolation group.

Comment: The most notable feature in the synthetic route presented above is a thallium-mediated oxidative dimerization of (+)-lochnerine (**E**) which regioselectively delivers the desired dimer **F**. Thereby, the rigid chiral framework of the monomer dictates atroposelection during the dimerization reaction, leading exclusively to the naturally occuring atropodiastereomer (*P*-isomer). This and similar results from an earlier semi-synthetic study led to the proposal that the biaryl coupling might closely parallel the biosynthetic route.

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